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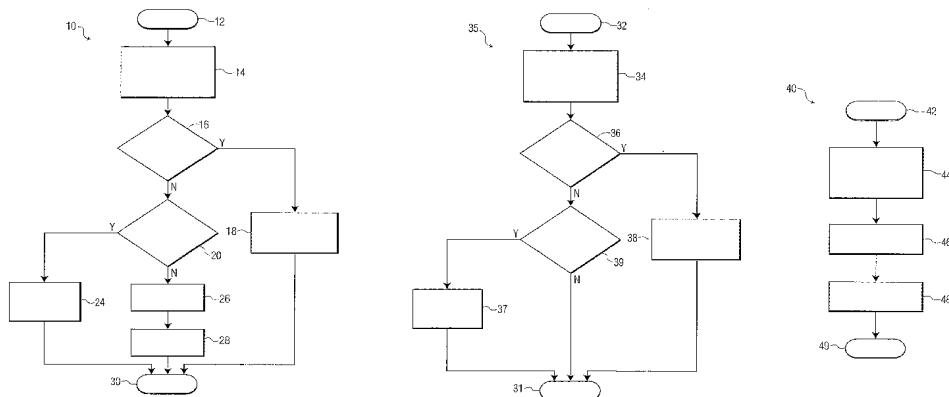
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— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT,

[Continued on next page]

(54) Title: A FREE-RUNNING NUMERICALLY-CONTROLLED OSCILLATOR USING COMPLEX MULTIPLICATION WITH COMPENSATION FOR AMPLITUDE VARIATION DUE TO CUMULATIVE ROUND-OFF ERRORS



(57) Abstract: A method and apparatus for efficiently generating complex sinusoids of a desired frequency by multiplying a phasor by a predetermined value once every sampling interval, and using the highest order bits within the phasor to identify if the phasor is at an integer multiple 45 degrees and substituting components in the phasor if it is determined that the phasor is an integer multiple of 45 degrees. If the phasor is not identified as being an integer multiple of 45 degrees then an error factor for both the real and imaginary components is determined and the real and imaginary components are corrected by removing the error factor.

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